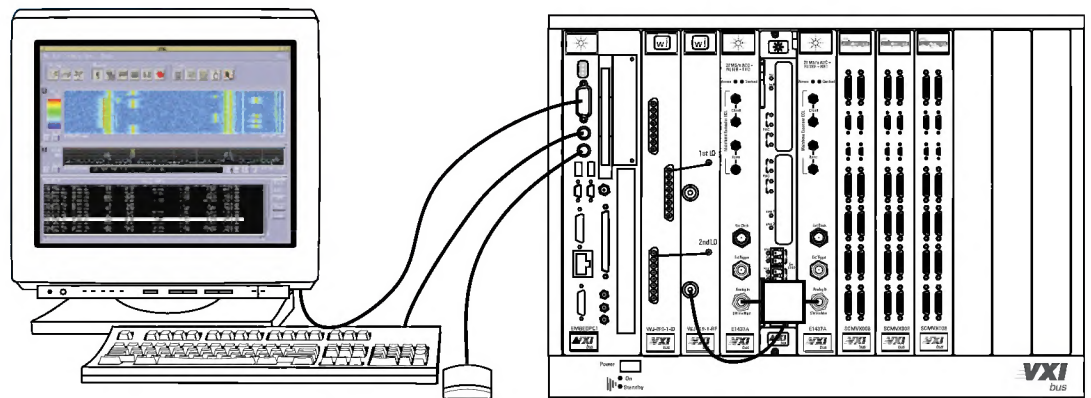


# Agilent E3238 Signals Development System

## Technical Specifications

HF, VHF/UHF, and  
Microwave Configurations



### Performance

The Agilent E3238 is designed to quickly locate elusive signals. E3238's fast sweep rate and high dynamic range significantly increase the probability of intercept. With the E3238, searches produce more hits quickly and efficiently.

### Automation

The E3238 system automates common tasks so an operator can focus on more complex operations, work faster and accomplish more. It allows highly skilled operators to automate functions for less skilled operators. The system can even run unattended.

### Adaptability

Optional user-programming software can be used to customize the E3238. Searches can be optimized to capture the signals of interest while disregarding extraneous signals. Displays can also be customized to increase productivity.

### Integration

The E3238 can integrate with legacy systems and hand-off receivers. LAN, GP-IB, RS-232, or the VXI backplane can be used to communicate with other hardware. Windows® sockets provide fast communication between software processes, even from remote locations.



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## Standard Software Features

(Applies to all configurations of the E3238)

### File

---

Secure display  
Access control  
    Password  
Working directory  
Snapshot directory  
Log files  
Load mission setup  
Save mission setup  
Preset mission setup  
Print  
Print to file  
Socket connections  
Shared libraries  
Exit

### Edit

---

Clear log  
Clear log files  
Clear energy history  
Clear signal database  
Clear frequency lists  
Clear audio output  
Clear all

### Configuration

---

Antennas  
Search receiver  
Handoff receivers  
Time reference  
Channelizer

### Search

---

Search  
    Off  
    On

#### Search type

---

General search  
Directed search  
    Up to 100 segments  
Tuner sweep control  
    Locked, unlocked

#### General search setup

---

Center frequency  
Span frequency  
Start frequency  
Stop frequency  
Full span  
Antenna selection  
Attenuation  
Resolution bandwidth  
    7.3 Hz – 120 kHz (tuner and ADC dependent)  
Shape factor  
    9:1  
    4:1  
    2.6:1  
Average type  
    Off  
    RMS  
    Peak  
Number of averages  
    1-31

## Energy detection

Energy detection  
Off  
On

Energy criteria  
dB above threshold  
Bandwidth

Features  
User-generated with AS9

Threshold  
Threshold margin (dB)  
Number of segments  
Smoothing factor  
Minimum signal level

---

## Energy history filter

(User-created with AS9)

Pre-filter(s) enable

Pre-filter(s) disable

Post-filter(s) enable

Post-filter(s) disable

## Alarms Setup

Alarms  
Enable  
Disable

Alarm type  
Energy  
Signal

Status  
Active  
Inactive

Trigger  
Always  
Per sweep  
Once

Events  
Single  
Multiple

Priority  
Low  
Medium  
High  
Critical

Energy detection schedule  
Continuous  
Band  
Hourly  
Daily

## Energy features

Energy  
Frequency  
Bandwidth  
Min  
Max  
Average  
Current

Amplitude  
Min  
Max  
Average  
Current

Duration  
Min  
Max  
Average  
Current

Number of intercepts  
Number of detections  
Occupancy %  
Intercept time  
First  
Last

Number of sweeps since first intercept  
Studio (user defined with AS9)  
RFSK

Energy type  
New energy  
Once energy  
Each energy  
Any energy  
No energy

Alarm tasks  
Handoff  
Visual  
Audible  
Frequency snapshot  
Time snapshot  
Add to frequency list  
Remove from frequency list

---

## Signal Processors

User-defined pane

---

**Display****Display layout**

Number of active layouts  
6

Number of panes  
8

Pane content types

Off  
Trace A  
Trace B  
Trace C  
Trace D  
Handoff receivers  
Handoff log  
Text editor  
Command line  
Toolbar  
New energy log  
Alarm log  
Energy history  
Signal database  
Visual alarms  
Frequency lists  
Feature studio

---

**Trace**

Number of traces  
4

Trace type  
Spectrum  
Spectrogram  
Color spectrogram

Threshold presentation

Off  
Line  
Mask

Grid type

Off  
Graticules  
Handoffs  
Energy history  
Alarm regions  
Frequency list

Grid frequency list

List 1-20

Marker

Off  
On

Handoff receiver link

Receiver 1-100

Handoff setup

Snapshot setup

---

**Trace scaling**

Number of independent traces  
4

Maximum amplitude

Minimum amplitude

Minimum frequency

Maximum frequency

---

**Trace mouse functions**

Left mouse button

Off  
Marker  
Directed search band  
Delta marker

Middle button

Off  
Drag and drop

Right mouse button

Off  
Trace scaling  
Search receiver tuning  
Handoff new energy  
Handoff all energy

---

**Trace color setup**

Elements

Background  
Trace  
Marker  
Grid  
Labels  
Threshold

Color layering order

Colors in color spectrogram

2-32

Default

---

**General**

Operating systems

Windows 2000®

Control interfaces

GPIB  
RS-232  
LAN  
VXI

Process-to-process communication

Sockets (Requires AS9)

Number of antennas

16 (requires E1472A RF multiplexer)

Online, context-sensitive help system

Windows 2000 is a U.S. registered trademark of  
Microsoft Corporation.

## Optional Software Features

### 35688D-AS9 User Programming

Option 35688D-AS9 allows users to extend the functionality of the E3238 and connect it to legacy systems. Extensions are written in C, and are dynamically linked into the E3238 as shared libraries. Software can be developed in Windows NT. Added functionality integrates seamlessly into the E3238 user-interface.

Shared library entry points

- Socket interface
- Spew interface
- User menu
- User pane (may require Motif™ programming)
- User alarm task
- Spectrum feature extraction
- Energy history database pre-filter
- Energy history database post-filter

### 35688D-ASH User Signal Programming

Option 35688D-ASH is an integrated software development environment to create, test, and deploy new signal types. Using a Programming Wizard, you can easily generate a working signal framework, and then drop in your own custom signal algorithms. The resulting program runs on a multi-processor VX008 DSP module, and is seamlessly integrated into the E3238 system. Using option 35688D-ASH, you can develop their own sensitive signals quickly.

### 35688D-ASM Feature Studio

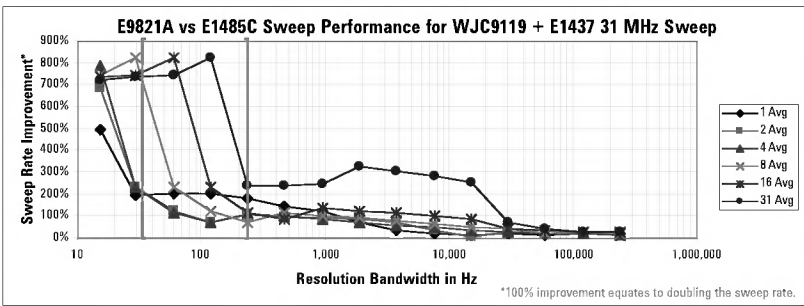
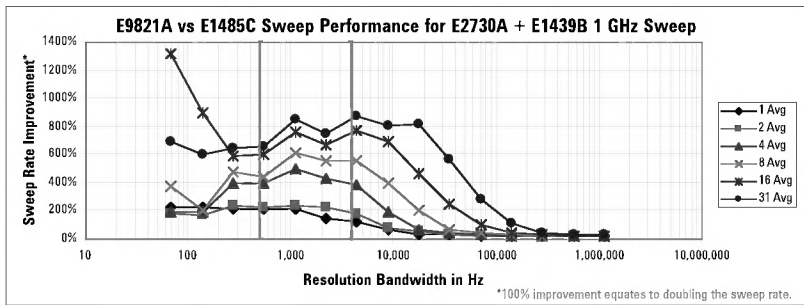
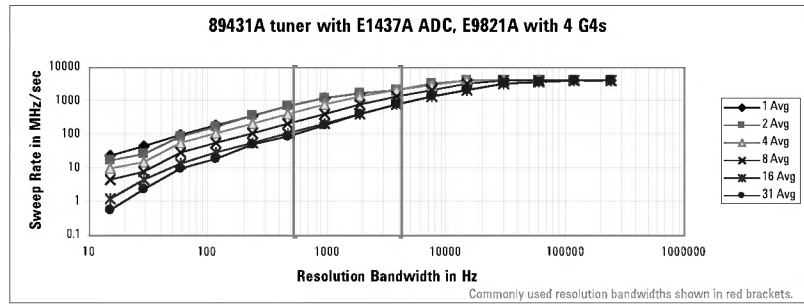
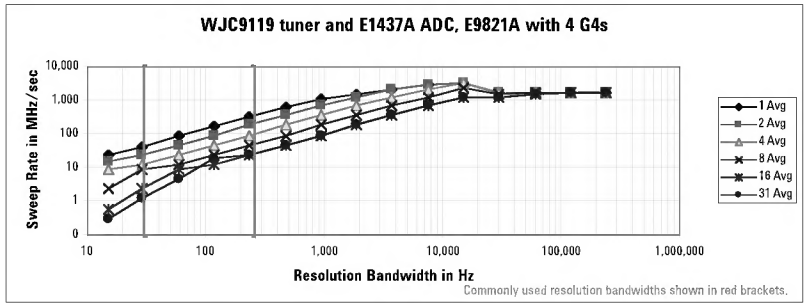
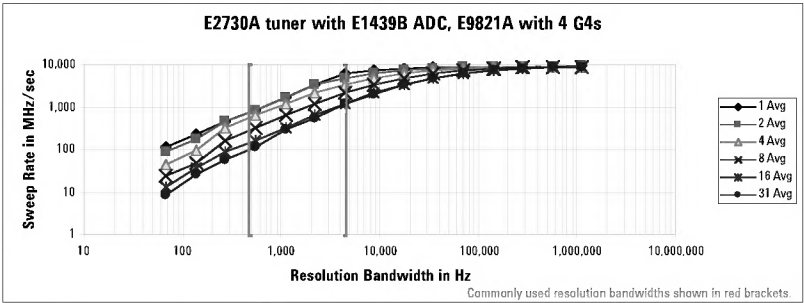
Option 35688D-ASM is a graphical program for creating complex-shaped upper and lower limit lines. It generates C code that is used with option 35688D-AS9 to implement limit lines to use as pre-filters in the E3238.

## Specifications

	HF	HF/VHF/UHF	VHF/UHF	VHF/UHF	µWave
<b>Tuner/Digitizer</b>	WJC9119/E1437A	89431A/E1437A	E2730A/E1439B	E2731A/E1439B	ComSol 5040/E1439B
<b>Frequency range</b>	0.1–32 MHz	2–2650 MHz	20–2700 MHz	20–6000 MHz	0.5–20 GHz
<b>Useable IF bandwidth</b>	6.75 MHz at 5.12 MHz IF	6 MHz at 5 MHz IF	36 MHz at 70 MHz IF	36 MHz at 70 MHz IF	36 MHz at 70 MHz IF
<b>Tuner noise figure</b>	13 dB, typical	14–15 dB, typical	11–12 dB, typical	16 dB typical	15 dB maximum
<b>Tuner internally-generated spurious</b>	-130 dBm, typical	N/A	-110 dBm, maximum	-110 dBm maximum	100 dBm maximum
<b>RF input attenuation i</b>	0–47dB, n 1 dB steps	0–75dB, in 5 dB steps	0–30dB, in 2 dB steps	0 - 30 dB in 2 dB steps	None
<b>Tuner pre-selection</b>	Yes	No	No	No	No
<b>Tuner form factor</b>	2 VXI C-1 modules	Rack and stack, 5.25"	1 VXI C-1 module	1 VXI C- module	1 VXI C-3 module
<b>ADC residual - spurious responses</b>	110 dBfs	-110 dBfs	-90 dBfs	-90 dBfs	-90 dBfs
<b>ADC harmonic - distortion -</b>	75 dBc or 110 dBfs	-75 dBc or -110 dBfs	-70 dBc or -90 dBfs	-70 dBc or -90 dBfs	-70 dBc or -90 dBfs
<b>ADC form factor</b>	1 VXI C-1 module	1 VXI C-1 module	1 VXI C-1 module	1 VXI C-1 module	1 VXI C-1 module
<b>Operating temperature range</b>	0–50° C	0–50° C	0–50° C (specified from 20–30° C)	0–50° C (specified from 20–30° C)	0–50° C

Benchmarks

Sweep Rate Performance



## Specification Note

Specifications describe warranted and benchmarked performance over a temperature range of 0° to 50 °C (except where noted), after a 30 minute warm up from ambient conditions. Supplemental characteristics identified as “typical” and “characteristic” provide useful information by giving non-warranted performance parameters. Typical performance is applicable from 20° to 30 °C. For more detailed specifications refer to the technical specification datasheets of the individual system components.

## Support

Agilent Technologies products are available globally. The E3238 is a commercial product and is easy to buy, maintain, and obtain professional support services.

The E3238 arrives with everything pre-installed and ready to run. Because the E3238 is standards-based, your investment is protected. As technology ramps, so can your system.

## Warranty

The hardware in the E3238 system is covered by a three-year return to Agilent Technologies parts and labor warranty. The software is warranted for 90 days. Additional coverage may be purchased from Agilent. Contact your local Agilent representative.

## Ordering information

<b>E3238S</b>	E3238S signals development system
<b>35688D</b>	E3238S signals development system operating software
<b>35688DU</b>	E3238S Signals Development System software upgrade to current revision from earlier revisions
<b>35688D-102</b>	Standard E3238S software for Windows 2000 platform
<b>35688D-AS9</b>	User programming
<b>35688D-ASM</b>	Feature Studio
<b>35688D-ASH</b>	User signal processing
<b>35688D-ORU</b>	Software update installation planning

Export of the 35688 product identified in this literature is subject to U.S. Export control laws. Export licenses are approved on a case-by-case basis and sale of any of these products is dependent on approval of the United States Government.

## Related Agilent Literature

*Agilent Communications Intelligence Solutions Overview*  
literature number 5988-0633EN

*E3238 Signals Development System Configuration Guide*  
literature number 5988-0562EN

*E3238 Signals Development System Option ASH Product Overview*  
literature number 5968-7077E

*E3238 Signals Development System Product Overview*  
literature number 5968-2075E

*Test Systems and VXI Products Catalog*  
literature number 5980-0307E

## Visit Our Websites

Agilent Communications Intelligence Information –  
[www.agilent.com/find/COMINT](http://www.agilent.com/find/COMINT)

Agilent VXI Product Information –  
[www.agilent.com/find/vxi](http://www.agilent.com/find/vxi)

System Components	Maximum Temperature
E9821A – Signal Processor Module For E3238 System*	50 degrees Celsius
E1438D – 100 MSa/s VXI ADC with filter and memory	50 degrees Celsius
E1439D – VXI 70 MHz IF ADC with filter and memory	50 degrees Celsius
EXTHD – External Desktop Disk Module	40 degrees Celsius
EXTDVD – External Desktop CD-ROM Drive	40 degrees Celsius
EXTDAT – External Desktop DAT Drive	40 degrees Celsius
MON17 – 17" Color Monitor (CRT)	40 degrees Celsius
MONLCD1 – 17" LCD Color Monitor	40 degrees Celsius
LTPC2 – Laptop PC With Windows 2000	35 degrees Celsius

\* When the E9821A is used in an E1421B 6-slot VXI mainframe the maximum system temperature is 40 degrees Celsius.

### **Agilent Technologies' Test and Measurement Support, Services, and Assistance**

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### **Canada:**

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(fax) (905) 282-6495

### **China:**

(tel) 800-810-0189

(fax) 1-0800-650-0121

### **Europe:**

(tel) (31 20) 547 2323

(fax) (31 20) 547 2390

### **Japan:**

(tel) (81) 426 56 7832

(fax) (81) 426 56 7840

### **Korea:**

(tel) (82-2) 2004-5004

(fax) (82-2) 2004-5115

### **Latin America:**

(tel) (305) 269 7500

(fax) (305) 269 7599

### **Taiwan:**

(tel) 080-004-7866

(fax) (886-2) 2545-6723

### **Other Asia Pacific Countries:**

(tel) (65) 375-8100

(fax) (65) 836-0252

**Email: [tm\\_asia@agilent.com](mailto:tm_asia@agilent.com)**

Product specifications and descriptions in this document subject to change without notice.

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Printed in USA December 4, 2003

**5963-6609E**



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